SYSTEMS AND METHODS FOR FACILITATING AGREEMENT DEFINITION VIA AN AGREEMENT MODELING SYSTEM

FIELD

The present invention relates to agreements between parties. In particular, the present invention relates to systems and methods for facilitating definition of an agreement between a party and a counter-party via an agreement modeling system.

5 BACKGROUND

Typically, an agreement between a party and a counter-party is manually defined by the parties. That is, one or both of the parties manually select a type of document that appropriately reflects the substance of the agreement (*e.g.*, a particular type of contract) and/or agreement terms to be included in the document (*e.g.*, contract clauses). Such a

10 manual approach, however, has a number of disadvantages.

For example, the manual definition of an agreement can be a time consuming and error-prone process, especially when a large number of potential document types and/or potential agreement terms can be associated with the agreement. Similarly, particular parties or localities may require different document types and/or agreement terms. As a

15 result, the parties must carefully consider the substance of the agreement in order to select the appropriate document type and/or agreement terms.

Consider, for example, a transaction agreement associated with a number of different financial instruments (*e.g.*, swaps and options) and financial products (*e.g.*, equities and commodities). In this case, different combinations of financial instruments

20 and financial products may call for different document types and/or agreement terms. Moreover, several different entities within a party (*e.g.*, a bank's taxation department and legal department) may need to provide input to the process.

It is known that some elements of agreement definition may be automated. For example, U.S. Patent No. 5,692,206 entitled "Method and Apparatus for Automating the Generation of a Legal Instrument" discloses a system that automates the generation of various legal documents related to a negotiated agreement. Even this approach, however,

5   does not address the potentially dynamic relationships that may exist between a party and a counter-party. For example, an agreement may be frequently amended to reflect new financial products or credit limits, and these amendments may be inter-related or retroactive. Such amendments are typically created as separate documents, making it difficult to ascertain the current status of an agreement, let alone the status of the

10   agreement on a particular date in the past.

Moreover, known systems rely on hard-coded rules, programs, and architectures to facilitate definition of an agreement. Often, however, agreements are flexible (*e.g.*, a new contract clause may suddenly become applicable to many different document types). In addition, the kinds of documents and contract terms that should be used for a particular

15   agreement (or a way in which existing terms will be interpreted) can change over time. Because known systems are hard-coded, they may be unable to efficiently handle the fluid environments in which many agreements are made and changed. For example, a conventional database approach in which information is stored in pre-defined tables and columns may not be an effective, long-term approach to agreement definition.

20   SUMMARY

To alleviate problems inherent in the prior art, the present invention introduces systems and methods for facilitating definition of an agreement between a party and a counter-party via an agreement modeling system.

According to one embodiment, an agreement type is determined based on (i) a

25   plurality of product types associated with a transaction agreement and (ii) a covered products matrix. An agreement term between a party and a counter-party is then determined in accordance with the agreement type.

According to another embodiment, an agreement type is determined along with an agreement term. An indication is then generated based on an evaluation of the agreement type and the agreement term.

According to another embodiment, a contract type is determined. A contract term
5   between a party and a counter-party is then determined in accordance with the contract type.

According to another embodiment, an agreement term is determined along with a term date associated with the agreement term. An indication of the agreement term is then stored in association with an indication of the term date, wherein an applicability of
10   the agreement term can be automatically determined based at least in part on the term date.

Another embodiment is directed to facilitating definition of an agreement between a party (including a first party entity and a second party entity) and a counter-party. According to this embodiment, a first agreement term is determined via the first party
15   entity. A second agreement term is then determined via the second party based at least in part on the first agreement term.

According to still another embodiment, an agreement term is determined. A value associated with the agreement term is then stored along with an indication of a right associated with the agreement term.

20   Yet another embodiment is directed to a computer-implemented method for facilitating definition of a transaction agreement between a party and a counter-party. According to this embodiment, at least one agreement document template associated with a transaction agreement type is created. A plurality of agreement facts are determined, at least one of the agreement facts being associated with the party and/or the counter-party.
25   An agreement document instance associated with the transaction agreement is then defined, the agreement document instance being based on the agreement document template and the plurality of agreement facts.

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One embodiment of the present invention comprises: means for automatically determining an agreement type based on a plurality of product types and a covered products matrix; and means for determining, in accordance with the agreement type, an agreement term between a party and a counter-party.

5   Another embodiment comprises: means for determining an agreement type; means for determining an agreement term; and means for generating an indication based on an evaluation of the agreement type and the agreement term.

Another embodiment comprises: means for determining a contract type; and means for determining, in accordance with the contract type, a contract term between a

10   party and a counter-party.

Another embodiment comprises: means for determining an agreement term; means for determining a term date associated with the agreement term; and means for storing an indication of the agreement term in association with an indication of the term date, wherein an applicability of the agreement term can be automatically determined

15   based at least in part on the term date.

Another embodiment comprises: means for determining a first agreement term via a first party entity; and means for determining a second agreement term via a second party entity based at least in part on the first agreement term.

Still another embodiment comprises: means for determining an agreement term;

20   and means for storing a value associated with the agreement term along with an indication of a right associated with the agreement term.

Yet another embodiment comprises: means for creating at least one agreement document template associated with a transaction agreement type; means for determining a plurality of agreement facts, at least one of the agreement facts being associated with a

25   party and/or a counter-party; and means for defining an agreement document instance associated with the transaction agreement, the agreement document instance being based on the agreement document template and the plurality of agreement facts.

With these and other advantages and features of the invention that will become hereinafter apparent, the invention may be more clearly understood by reference to the following detailed description of the invention, the appended claims, and the drawings attached herein.

5   BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a block diagram overview of an agreement modeling system according to an embodiment of the present invention.

FIG. 2 is a flow chart of a method according to some embodiments of the present invention.

10   FIG. 3 is a block diagram overview of an agreement modeling system according to another embodiment of the present invention.

FIG. 4 is a client-server diagram overview of an agreement modeling system according to some embodiments of the present invention.

FIG. 5 is a more detailed diagram of an agreement modeling system according to

15   an embodiment of the present invention.

FIG. 6 is an information architecture overview associated with an agreement modeling system according to some embodiments of the present invention.

FIG. 7 is a flow chart of a method for storing information associated with an agreement modeling system according to some embodiments of the present invention.

20   FIG. 8 illustrates various representations of agreement modeling system information according to an embodiment of the present invention.

FIG. 9 is a flow chart of an agreement modeling system method according to some embodiments of the present invention.

FIG. 10 is a block diagram of an agreement modeling system controller according

25   to an embodiment of the present invention.

FIG. 11 is a tabular representation of a portion of an agreement information database according to an embodiment of the present invention.

FIG. 12 is a flow chart of a method for establishing a time perspective via an agreement modeling system according to some embodiments of the present invention.

5   FIG. 13 illustrates agreement time perspective according to one embodiment of the present invention.

FIG. 14 is a flow chart of a method associated with a covered products matrix according to some embodiments of the present invention.

FIG. 15 illustrates an example of a covered products matrix according to an
10   embodiment of the present invention.

FIG. 16 illustrates another example of a covered products matrix according to an embodiment of the present invention.

FIG. 17 is a flow chart of another method associated with a covered products matrix according to some embodiments of the present invention.

15   FIG. 18 is a flow chart of a method for facilitating definition of a transaction agreement between a party and a counter-party according some embodiments of the present invention.

FIGS. 19A and 19B are block diagrams of agreement modeling system functions, applications, and interactions according to some embodiments of the present invention.

20   FIG. 20 is a block diagram of agreement creation interactions according to some embodiments of the present invention.

FIG. 21 is a block diagram of document creation interactions according to some embodiments of the present invention.

FIGS. 22 through 24 illustrate client displays associated with an agreement
25   according to an embodiment of the present invention.

FIG. 25 is a flow chart of a method for facilitating definition of an agreement between a party (including a first party entity and a second party entity) and a counter-party according some embodiments of the present invention.

FIGS. 26A and 26B are a flow chart of another method for facilitating definition
5   of an agreement according to some embodiments of the present invention.

FIG. 27 illustrates some examples of agreement definition via multiple entities according to an embodiment of the present invention.

DETAILED DESCRIPTION

Embodiments of the present invention are associated with systems and methods
10   for facilitating definition of an "agreement" between a party and a counter-party via an agreement modeling system. As used herein, the term "agreement" may refer to any arrangement between the parties. An agreement may be, for example, a legal contract defining a set of rights that exist between the parties, such as an INTERNATIONAL SWAP DEALERS ASSOCIATION® (ISDA®) master agreement associated with
15   financial instruments and products. Note that a single agreement may be associated with more than two parties (e.g., three parties may enter into a legal contract). Also note that an agreement may or may not be legally binding (e.g., an agreement may simply reflect an informal understanding between parties).

In addition, as used herein the terms "party" and "counter-party" can refer to any
20   entity associated with an agreement. A party may be, for example, a business, a business entity (e.g., a department within a business), or a person.

Agreement Modeling System Overview

Turning now in detail to the drawings, FIG. 1 is a block diagram of an agreement modeling system 100 according to an embodiment of the present invention. As shown in
25   FIG. 1, an agreement modeling system controller 1000 may interact with a client device

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10. For example, a user may input information associated with a transaction agreement via the client device 10. The client device 10 may then transmit appropriate information to the agreement modeling system controller 1000, which in turn may store and/or interpret the information. Similarly, a user may request information about an agreement

5   via the client device 10 (*e.g.*, by performing a query associated with a transaction agreement).

FIG. 2 is a flow chart of a method according to some embodiments of the present invention. The flow charts in FIG. 2 and the other figures described herein do not imply a fixed order to the steps, and embodiments of the present invention can be practiced in

10   any order that is practicable. The method shown in FIG. 2 may be performed, for example, by the agreement modeling system controller 1000.

At 202, a contract type is determined. For example, a user may input information via the client device 10 indicating one or more financial products that will be associated with the contract. The agreement modeling system controller 1000 may then determine

15   an appropriate contract type based on those financial products.

At 204, a contract term between a party and a counter-party is determined in accordance with the contract type. For example, based on the contract type determined at 202, the agreement modeling system controller 1000 may determine one or more appropriate contract terms (*e.g.*, a contract clause or a credit limit to be associated with a

20   particular financial product).

Agreement Modeling System Architecture

FIG. 3 is a block diagram overview of an agreement modeling system 300 according to another embodiment of the present invention. As in FIG. 1, the agreement modeling system controller 1000 communicates with the client device 10. As used

25   herein, devices (such as the agreement modeling system controller 1000 and the client device 10) may communicate via a communication network 20, such as a Local Area Network (LAN), a Metropolitan Area Network (MAN), a Wide Area Network (WAN), a

proprietary network, a Public Switched Telephone Network (PSTN), a Wireless Application Protocol (WAP) network, a wireless LAN (*e.g.*, in accordance with the Institute of Electrical and Electronics Engineers 802.11 standard), a Bluetooth network, an Infrared Radiation (IR) network, and/or an IP network such as the Internet, an intranet or an extranet. As used herein, the term "communications" can refer to wired and/or wireless communications as appropriate. Note that the devices shown in FIG. 3 need not be in constant communication. For example, the agreement modeling system controller 1000 may communicate with a client device 10 on an as-needed or periodic basis.

Although a single agreement modeling system controller 1000 is shown in FIG. 3, any number of agreement modeling system controllers 1000 may be included in the agreement modeling system 300. Similarly, any number of client devices 10, or any other device described herein, may be included in the agreement modeling system 300 according to embodiments of the present invention.

The agreement modeling system controller 1000 and the client devices 10 may be any devices capable of performing the various functions described herein. A client device 10 may be, for example: a Personal Computer (PC), a portable computing device (*e.g.*, a laptop computer), a Personal Digital Assistant (PDA), or a dedicated agreement modeling system 300 terminal. Note that the client device 10 may be associated with a full-blown workstation application or a thin-client browser-based application.

According one embodiment, a user enters information associated with an agreement via the client device 10. The agreement may be, for example, associated with financial transactions between a party and a counter-party. In this case, the user may enter information about the party, the counter-party, and/or the financial transactions via the client device 10 (*e.g.*, by selecting a number of different financial instruments that will be involved in transactions between the parties).

Information associated with the agreement may then be transmitted from the client device 10 to the agreement modeling system controller 1000 via the communication network 20, and the agreement modeling system controller 1000 may

process the information to facilitate definition of the agreement. According to one embodiment, the agreement modeling system 1000 also communicates with one or more satellite systems, such as a business system 30, a legal system 40, a compliance system 50, a credit system 60, a treasury system 70, and/or an operations system 80 to facilitate

5   definition of the agreement. For example, the agreement modeling system controller 1000 may review information provided by the user and determine that the agreement requires approval via a credit system 60. Note that the agreement modeling system controller 1000 may communicate with the client device 10 and one or more satellite systems via a single communication network or via different communication networks.

10   FIG. 4 is a client-server diagram overview of an agreement modeling system 400 according to some embodiments of the present invention. As shown in FIG. 4, a database server 1002 communicates with a number of middle-tier servers 1004. In turn, each middle-tier server 1004 communicates with one or more client devices 12.

The database server 1002 may include (or communicate with) an agreement

15   modeling system database, such as a database that stores agreement information. The database server 1002 may also include Java and Structured Query Language (SQL) stored procedures along with User Defined Functions (UDFs). The database server 1002 can act as a "back-end" to the agreement modeling system 400 and manage user connections (e.g., by invoking stored procedures in and out, validating client logons, establishing

20   client access rights, and/or maintaining a list of connected clients). The database server 1002 may also perform concurrency management (e.g., by responding to client timeout or disconnect notifications from middle-tier servers 1004, releasing check-out locks, updating access modes, and managing access modes and check-out locks on agreements, facts, or fact sets as described, for example, with respect to FIG. 6). In addition, the

25   database server 1002 may manage Extensible Markup Language (XML) and Application Program Interface (API) information (e.g., by managing special Java XML API entry point stored procedures, interpreting incoming XML streams, performing appropriate XML operations, returning appropriate response XML packets, and/or retrieving agreement information using XML streams).

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The middle-tier servers 1004 may comprise, for example, SILVERSTREAM® or WEBLOGIC® servers that manage user connections (*e.g.*, via special login and logout servlet interfaces and/or by establishing logins and logouts with the database server 1002). The middle-tier servers 1004 may also perform session management (*e.g.*, by

5 handling timeouts and disconnects and notifying the database server 1002 when a client device 12 has timed-out or disconnects) and/or manage database connections (*e.g.*, by optimizing and pooling database connections and providing XML user and session identification packets associated with XML packets sent to the database server 1002). The middle-tier servers 1004 may also perform XML API management (*e.g.*, using a

10 special XML API servlet interface that serves as a pass-through for XML packets sent to the database server 1002 via calls to a Java stored procedure).

A client device 12 may, for example, control user functionality (*e.g.*, by supporting applicable user interactions). The client device 12 may also perform session management (*e.g.*, by providing user login and logout capability, managing a physical

15 connection including a connection status notification to a user, and issuing a logout when appropriate) and manage XML API interactions (*e.g.*, by interacting with an XML API back-end via correctly formed XML packets, and/or managing incoming XML API response packets returned from XML API calls).

This hierarchical arrangement (*e.g.*, having a client tier, a middle tier, and a

20 database tier) may let a significant number of client devices 12 access and utilize the database server 1002.

FIG. 5 is a more detailed diagram of an agreement modeling system 500 according to one embodiment of the present invention. As shown in FIG. 5, a database server 1006 communicates with a middle-tier server 1008. In turn, the middle-tier server

25 1008 communicates with a client device 14.

The database server 1006 may, for example, provide support for an API via stored procedures and UDFs. The database server 1006 may also manage persistence of

agreement information and API states for the agreement modeling system 500 in a database.

The middle-tier server 1008 may communicate with the database server 1006 via a number of server-side language managers, such as an agreement and/or a utility language manager. The server-side language managers may, for example, implement interfaces similar to those provided on the client side to provide specific API functionality. These managers may be registered with an execution manager indicating supported interfaces. Instances of the server-side language managers may be instantiated to service incoming API method calls. The managers may also provide implementation of the API method calls by interacting directly with the agreement database via stored procedure calls.

The server-side language managers may communicate with the execution manager via a server-side base language manager that routes method calls and provides implementation of common API methods.

The execution manager may exchange information with a communication manager associated with the client device 14 via a Hyper-Text Transfer Protocol (HTTP) connection. In addition, the execution manager may be delegated to by middle-tier servlets that process HTTP requests and responses. The execution manager may also handle all incoming API "method calls" and interact with the service-side base language manager to service those calls. Moreover, the execution manager may be responsible for the registration of server-side language managers, "de-serializing" XML method call packets, routing methods to the appropriate registered server-side language manager, "serializing" return values or errors into XML packets, and/or forwarding return values or errors back to the client device via an HTTP response.

The communication manager in the client device 14 interacts with a client-side base language manager and the middle-tier servlets. The communication manager is responsible for managing the connection with the server, the invocation of method calls by passing a stream to the server, the receiving return values or errors back as a stream,

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and/or propagating up return values or errors to the language manager layer. Both synchronous and asynchronous method calls may be supported at this layer.

The client-side base language manager may define a base class from which extended client-side language managers are derived. Common functionality may be

5   implemented in the base class, including a standard set of API method calls. The client-side base language manager may also be responsible for interacting with the communication manager to process method calls forwarded by derived client-side language managers.

The client side base language manager communicates with a number of client-

10   side language managers, such as an agreement and/or a utility language manager. The client-side language managers may implement interfaces providing specific API functionality to the client device 14. The API methods in the client application may be called like any other local method. The derived client-side language managers may be responsible for serializing method calls into XML packets and/or interacting with the

15   client-side base language manager to process the call.

Agreement Modeling System Information Architecture

In order to define an agreement, the facts that are associated with the agreement need to be captured. However, different agreements may not be equal in terms of data content, and thus a flexible database design (*e.g.*, capable of capturing a variety of data

20   while maintaining relative data context) may be required to allow for effective and reliable agreement definition, generation, and/or utilization (e.g., via agreement information data queries).

To achieve this end, the agreement modeling system may utilize a modeling language by which agreement content and context can be described without re-coding the

25   database. FIG. 6 is an information architecture overview associated with one such embodiment of the present invention. As can been in FIG. 6, the information architecture is associated with a hierarchical view of agreement information. In particular, an

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agreement 602 is viewed as a set of related documents 604. Each document 604 comprises one or more fact sets 606, and each fact set 606 includes a number of related facts 608 (*e.g.*, single pieces of information). Thus, the information architecture may apply structure to information through the constructive use of well-known fact sets 606

5   and data definitions that are applied to facts 608, and taken together, data context may be maintained.

According to one embodiment, the agreement 602 is associated with an "original" document instance containing facts 608 that define the agreement 602 upon creation. As additional information is created (*e.g.*, the original agreement 602 is amended), additional

10   documents 604 may be added to define the facts 608 that apply at particular points in time.

For example, a document 604 may be created that "overrides" existing facts 608 in an agreement 602 for a specified period of time and/or that adds new facts 608 that extend existing facts 608. In either case, the added document 604 may now be

15   considered to determine a complete set of agreement facts 608 (*e.g.*, via an agreement modeling system query).

According to one embodiment, documents 604 may be categorized according to a single document type name and any number of document type facts that further refine the documents classification. By way of example, the document type name may indicate a

20   basic category of agreement types (*e.g.*, a financial instrument swap agreement or an over-the-counter financial instrument agreement) and the document type fact (or facts) may further categorize a document's relationship to an agreement (*e.g.*, a credit support annex or an amendment to an existing agreement 602).

A document 604 contains instances of fact sets 606, and a fact 608 may belong to

25   an instance of a fact set 606. Fact set definitions (in addition to document definitions) may exist outside of any agreement, and their definition and fact content may be described via an agreement modeling language.

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By way of example, a fact 608 may be associated with a party name, a party address, a term date, a country of origin, an indication of governing law (*e.g.*, "Delaware law applies to all transactions associated with this agreement"), or any other information associated with an agreement. A fact set 606 may comprise, for example, a counter-party

5   fact set including a counter-party name and address.

Note that fact sets 606 can be single-instance or multi-instance. In either case, a fact 608 belonging to a fact set 606 may be related to the other facts 608 in that fact set 606. A multi-instance fact set 606 enables the repeated instantiation of the same set of facts 608, typically with different values being associated with the different instantiated

10   facts 608. An instance of a multi-instance fact 606 set is analogous to a row of data in a conventional database table, and the facts 608 are analogous to columns. Note, however, that the table is not statically defined - rather it is dynamically defined via the agreement modeling language.

A fact 608 in the agreement modeling system may have pre-defined attributes that

15   describe the fact's nature and meaning. For example, each fact 608 may have an associated data type that defines a set of potential values and/or data input behavior. A fact 608 may be considered "internal" or "external," and external facts may map to information in other databases (*i.e.* external databases). In addition, other attributes may be applied to facts 608 to help to define context.

20   FIG. 7 is a flow chart of a method for storing agreement information according to some embodiments of the present invention. At 702, an agreement term is determined. For example, the agreement modeling system controller 1000 may determine one or more facts associated with an agreement (*i.e.*, facts indicating an agreement term) based on information provided via a client device 10. According to another embodiment, the

25   agreement modeling system controller 1000 determines the agreement term by accessing other information (*e.g.*, via a covered products matrix as described with respect to FIGS. 14 through 16).

At 704, a value associated with the agreement term is stored along with an indication of a right associated with the agreement term. To provide flexibility, the value may be stored via an extensible agreement modeling system language. For example, an XML or Standard Generalized Markup Language (SGML) data format may be used to

5   store information as follows:

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<Agreement>
       <Document>
              <FactSet>
                     <Fact>
                     </Fact>
                            ...
              </FactSet>
                     ...
       </Document>
              ...
</Agreement>
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Such an approach may let the system model dynamic information (*e.g.*, document and fact set information) and facilitate communication of dynamic agreement information

20   between a client and a server. In addition, the implementation may be technology neutral (*e.g.*, the information may be provided to or accessed by a number of different technologies). Moreover, facts may be associated with attribute information, such as a data name, a data prompt, a data type, a security attribute, and/or a display attribute.

FIG. 8 illustrates various representations of agreement modeling system

25   information according to an embodiment of the present invention. In particular, the relationships between an information architecture 802, an XML representation 804, and a display 806 are illustrated. For example, document level information may be mapped to a particular XML representation (*e.g.*, <Document spec = "ORIGINAL|MASTER" id = "2" ...>, which in turn may be rendered by an agreement application display engine (*e.g.*,

30   via a document list pane and/or an active document information pane).

Agreement Modeling System Operation

FIG. 9 is a flow chart of a method according to some embodiments of the present invention. At 902, information associated with an agreement is gathered. For example, the agreement modeling system controller 1000 may gather information associated with a

5   financial transaction agreement between a party and a counter-party via one or more client devices 10 and/or satellite systems.

At 904, it is determined if a new agreement is required. According to one embodiment, a request for a new agreement may be generated by a satellite system, such as the business system 30, the credit system 60, and/or the treasury system 70.

10   By way of example, a user associated with the business system 30 may populate a new agreement request form via a Web-based interface provided by the agreement modeling system 1000. The new agreement request form may include, for example, a set of "required" information, such as: a name of a sales person covering an account, a selected entity master (e.g., via a drop-down list of party entities that the counter-party is

15   contemplating doing business with), a business desk (e.g., an indication of "Fixed Income," "Equity," or "Commodities" which may be automatically generated based on a user identifier), a counter-party legal name (e.g., selected from a drop-down list), contact information of a person with whom documentation will be exchanged (e.g., a name, a phone number, and/or a facsimile number), one or more products to be traded (e.g.,

20   associated with a covered products matrix), an indication of whether or not the agreement is bilateral (e.g., two-way agreements may require special processing via the treasury system 70), an anticipated trade date, an indication of whether or not the agreement will be used as a marketing tool.

The new agreement request form may also include information that will be

25   required when appropriate (e.g., based on the particular agreement being requested), such as a type of agreement (e.g., selected from a drop-down list) and/or an investment

advisor. The new agreement request form may also include optional information, such as an electronic mail address associated with the counter-party.

As indicated above, some information may be selected by a user via a drop-down list (*e.g.*, a counter-party name or identifier). In some cases, however, the desired

5   information may not be present in the drop-down list (*e.g.*, when a new counter-party is desired). In this case, a user may be asked to complete another form (*e.g.*, a new counter-party request form) or he or she may simply enter the information manually (*e.g.*, via free form text). Also note that one or more satellite systems may be involved in this process (*e.g.*, the compliance system 50 may approve new counter-parties).

10   After the new agreement request form is submitted by the user, the agreement modeling system controller 1000 determines if a new agreement is actually required at 904. For example, the agreement modeling system controller 1000 may execute a query to ensure that there are no other existing agreements in place and return the results of the query to the user (*e.g.*, by indicating that "there are existing agreements that cover this

15   request"). If no new agreement is required at 904 (*e.g.*, an appropriate existing agreement is found by the agreement modeling system controller 1000), one or more amendments to the existing agreement may be facilitated at 906. For example, the agreement modeling system controller 1000 or the compliance system 50 may determine that an existing agreement can be used to cover a transaction by broadening a compliance covered

20   products scope term in the existing agreement. In this case, an electronic mail message may be transmitted to the legal system 40 asking if the agreement scope can be broadened accordingly. The legal system 40 may then indicate to the business system 30 that the transaction can be covered under the existing agreement. On the other hand, the legal system 40 may instead indicate that a new agreement is required.

25   If a new agreement is required at 904 (*e.g.*, no appropriate existing agreement is found by the agreement modeling system controller 1000), the new agreement request form is processed by the agreement modeling system controller 1000. According to one embodiment, the processing of the new agreement request form also involves one or more satellite systems. For example, the compliance system 50 may receive the request

via an automated workflow and provide information as required. In this case, the compliance system 50 may advise the legal system 40 as to the types of products the counter-party is authorized to trade, and with which party entity the counter-party may trade these products.

5   To make such a decision, the compliance system 50 may need to access information about the agreement, such as the counter-party name or identifier, a master agreement type, a current status of the master agreement type, a date of agreement, a document identifier, an investment advisor, and/or a security agreement type.

In addition to accessing information, the compliance system 50 may define facts 10   for the agreement, such as: a compliance officer name responsible for the account, a party entity approved for the business, a covered products matrix indicating the authorized products the counter-party can or can't trade, and/or one or more supporting authority documents.

When the compliance system 50 finishes providing information, the form may be 15   forwarded to the credit system 60 (*e.g.*, if the agreement is associated with a risk transaction) to provide still more information. Such information may include, for example, collateral terms such as: a credit officer name responsible for the account, terms of a collateral agreement (*e.g.*, bilateral, party post, or counter-party post), an independent amount (*e.g.*, an initial margin percentage or dollar amount associated with notional 20   amount), a threshold amount (*e.g.*, a trigger value associated with a specified dollar amount or a ratings table), a minimum transfer amount, a rounding amount, and/or a base currency.

The credit system 60 may also provide non-collateral terms, such as: default information (*e.g.*, bankruptcy information or credit event upon merger information), a 25   cross acceleration threshold amount for the counter-party, and/or one or more credit-related additional termination events (*e.g.*, adequate assurance, amendment of constituent documents, break clause, credit rating downgrade, decline in partners capital, governmental moratorium on debt declared, investment advisor event, material adverse

change, modification to guaranty, net asset value information, ownership maintenance, redemption of notes, termination of trust under trust agreement, termination rights linked to separate agreement, transactions not covered by guaranty and/or guarantor, or withdrawal of general partners or key employees).

5   The credit system 60 may also indicate one or more credit support documents referenced under the agreement, such as: a comfort letter, a deed poll guarantee, an indemnity agreement, a Keepwell agreement, a letter of commitment, a letter of credit, a security trust deed, a senior facility agreement, a supplemental trust deed, a support agreement, and/or a swap surety bond/insurance policy.

10   In addition to the credit system 60, the treasury system 70 may provide information associated with bilateral agreements, such as an indication of approval, a threshold amount, a notional amount, eligible collateral types (*e.g.*, United States Treasury bills, highly liquid pools, AAA bonds, residuals, commercial paper, investment grade corporate instruments, preferred stock, municipals, emerging market debt, Brady 15 bonds, high yields, non-distressed issues, distressed issues, bank debt, par, whole loans, residential, commercial, and/or short-term mortgage backed bank notes), equities (*e.g.*, United States or United Kingdom listed equities, foreign convertibles-investment grade, foreign convertibles-high yield, listed mutual funds, rights and warrants, or options), commodities (*e.g.*, metals or energy), interest paid on cash collateral, base currency on 20 cash, tri-party custodial relationships, notification time, amendments to transfer provision (*e.g.*, after approval by the legal system 40).

           According to one embodiment, the processing of multiple new agreement request forms may be prioritized (*e.g.*, based on a date on which a request was made, a date associated with a pending trade, or a number of requests in a queue for a given business 25 area).

           Referring again to FIG. 9, after it is determined at 904 that a new agreement is needed, an agreement is drafted by the agreement modeling system controller 1000 at 908. For example, the agreement modeling system controller 1000 may use a rule set to

route the new agreement request form to an appropriate functional group within the legal system 40 based on a product type and/or a party entity. Moreover, an agreement type (*e.g.*, an ISDA® master agreement schedule, a club letter, or a credit support annex in accordance with New York law) may be determined based on one or more rules by the

5   legal system 40 or the business system 30. According to one embodiment, a user has the ability to override an agreement type chosen by the system.

According to some embodiments, the legal system 40 can access the generated agreement on-line to review the agreement's structure and to make revisions, if required. The legal system 40 may also prepare the agreement for transmission. If desired, the

10   legal system 40 may be prevented from changing or over-riding data that was originally provided via the new agreement request form.

The agreement modeling system controller 1000 may then automatically generate the agreement and, according to one embodiment, any supporting documents that accompany the agreement (*e.g.*, a power of attorney, a legal opinion, a pre-executed

15   request guarantee, and/or a cover letter).

The user or the agreement modeling system controller 1000 then forwards the agreement to the counter-party at 910. For example, a user may manually print hard copies of the agreement to send via a delivery service (*e.g.*, FED EX®). According to another embodiment, the agreement modeling system controller 1000 sends a facsimile or

20   an electronic message attachment of the agreement in an unalterable format (*e.g.*, a "pdf" file) to the counter-party. In this case, the system may also provide the user with an automated notification that the document has been successfully transmitted. According to another embodiment, the agreement is published via a Uniform Resource Locator (URL) address that enables the counter-party to securely view the agreement.

25   According to one embodiment, the agreement modeling system controller 1000 instead determines that an agreement will not be automatically generated. This may be the case, for example, when a data field in the new agreement request form requires a change (*e.g.*, a name change or a policy change). Similarly, it may be determined that a

counter-party form of the agreement will be used, that supervisory review is required (*e.g.*, based on a functional group associated with the agreement), or that the business system 30 has asked that the generation or transmission be postponed.

5   The counter-party may the respond to the draft agreement (*e.g.*, by proposing changes to the draft agreement). For example, the counter-party may return a hard copy of an altered agreement. In this case, the hard copy may be scanned and stored via an Optical Character Recognition (OCR) application. The counter-party may instead contact the party via telephone to verbally confirm the terms of the agreement or advise of any discrepancies between the counter-party's view and party's view of the agreement.

10 In this case, the agreement modeling system controller 1000 may store the name of the person who called and the time, date, and substance of the conversation.

Any changes proposed by the counter-party are then reviewed at 912. For example, discrepancies may be determined and routed to the appropriate party entities for reconciliation (*e.g.*, by routing the information to an appropriate information owner based

15 on a functional group or a document type).

If the changes proposed by the counter-party do not require further negotiation at 914 (or the counter-party has simply approved the draft agreement), the system waits for approval by the party at 916. If the changes proposed by the counter-party do require further negotiation at 914, negotiations continue until the differences are resolved at 918.

20 When both the counter-party and the party (including any entities associated with the party) have approved the agreement, a final execution document is prepared at 920 and sent to the appropriate parties for execution at 922. For example, two hard copies of a fully negotiated ISDA® schedule and boiler-plate may be printed and forwarded to the counter-party for signature. In addition, a cover letter with instructions to the counter-

25 party may be automatically generated along with any required tax documents.

The counter-party can then return the signed agreement via hard copy, electronic mail, facsimile, or a URL, together with any supporting documentation (*e.g.*, a power of attorney). The date that the agreement was executed may be recorded by the agreement

modeling system controller 1000 along with, for example, a date on which the agreement is effective (which may or may not be the same as the execution date). Any subsequent amendments to the agreement may then be made at 906.

Agreement Modeling System Controller

5   FIG. 10 illustrates an agreement modeling system controller 1000 that is descriptive of the devices shown, for example, in FIGS. 1 and 3 according to some embodiments of the present invention. The agreement modeling system controller 1000 comprises a processor 1010, such as one or more INTEL® Pentium® processors, coupled to a communication device 1020 configured to communicate via a communication

10   network (not shown in FIG. 10). The communication device 1020 may be used to communicate, for example, with one or more client devices 10 and/or satellite devices.

The processor 1010 is also in communication with an input device 1040. The input device 1040 may comprise, for example, a keyboard, a mouse or other pointing device, a microphone, knob or a switch, an IR port, a docking station, and/or a touch

15   screen. Such an input device 1040 may be used, for example, to enter information (*e.g.*, agreement information).

The processor 1010 is also in communication with an output device 1050. The output device 1050 may comprise, for example, a display (*e.g.*, a display screen), a speaker, and/or a printer. The output device 1050 may be used, for example, output

20   agreement information (*e.g.*, a final version of an agreement to be executed or a date on which a particular agreement became effective).

The processor 1010 is also in communication with a storage device 1030. The storage device 1030 may comprise any appropriate information storage device, including combinations of magnetic storage devices (*e.g.*, magnetic tape and hard disk drives),

25   optical storage devices, and/or semiconductor memory devices such as Random Access Memory (RAM) devices and Read Only Memory (ROM) devices.

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The storage device 1030 stores a program 1015 for controlling the processor 1010. The processor 1010 performs instructions of the program 1015, and thereby operates in accordance with the present invention. For example, the processor 1010 may receive agreement information, process agreement information (*e.g.*, in accordance with

5   one or more rules), and/or output agreement information.

According to one embodiment, the processor 1010 automatically determines an agreement type based on a plurality of product types and a covered products matrix. The processor 1010 then determines, in accordance with the agreement type, an agreement term between a party and a counter-party.

10   According another embodiment, the processor 1010 determines an agreement type and an agreement term. The processor 1010 then generates an indication based on an evaluation of the agreement type and the agreement term.

According another embodiment, the processor 1010 determines a contract type. The processor 1015 then determines, in accordance with the contract type, a contract term

15   between a party and a counter-party.

According another embodiment, the processor 1010 determines an agreement term and a term date associated with the agreement term. The processor 1010 then stores an indication of the agreement term in association with an indication of the term date, wherein an applicability of the agreement term can be automatically determined based at

20   least in part on the term date.

According another embodiment, the processor 1010 determines a first agreement term via a first party entity and, based at least in part on the first agreement term, determines a second agreement term via a second party entity.

According still another embodiment, the processor 1010 determines an agreement

25   term stores a value associated with the agreement term along with an indication of a right associated with the agreement term.

According yet another embodiment, the processor 1010 creates at least one agreement document template associated with a transaction agreement type. The

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processor 1010 then determines a plurality of agreement facts, at least one of the agreement facts being associated with a party and/or a counter-party. An agreement document instance associated with the transaction agreement is then defined by the processor 1010, the agreement document instance being based on the agreement

5   document template and the plurality of agreement facts.

The storage device 1030 also stores an agreement information database 1100. The illustration and accompanying description of this database is exemplary, and any number of other database arrangements could be employed besides those suggested by the figure.

10   Referring to FIG. 11, a table represents the agreement information database 1100 according to one embodiment of the present invention. The table includes entries identifying agreement information. The table also defines 1102, 1104, 1106, 1108, 1110 for each of the entries. In particular, the table defines an agreement information identifier 1102, an information type 1104, an entry date 1106, an effective date 1108, and an

15   expiration date 1110. The information in the agreement information database 1100 may be created and updated, for example, by the agreement modeling system controller 1000, a client device 10, and/or a satellite device.

The agreement information identifier 1102 may be, for example, an alphanumeric code associated with an agreement term (*e.g.*, an agreement, a document, a fact set, or a

20   fact). The information type 1104 describes the agreement information. For example, the agreement information may comprise an original master agreement or an amendment to an existing master agreement.

The agreement information database 1100 also stores one or more term dates associated with the agreement information. For example, the entry date 1106 indicates

25   when the agreement information was stored in the database. Other term dates indicate a period during which a particular agreement term applies. For example, an agreement term may apply from the effective date 1108 to the expiration date 1110. Note that the

effective date 1108 may be prior to (or after) the entry date 1106 associated with an agreement term.

Agreement Modeling System Time Perspective

5   FIG. 12 is a flow chart of a method for establishing a time perspective according to some embodiments of the present invention. At 1202, an agreement term is determined. For example, the agreement modeling system controller 1000 may determine an agreement type, document, fact set, and/or fact based on information received via a client device 10.

          At 1204, a term date associated with the agreement term is determined. For
10   example, the agreement modeling system controller 1000 may determine the term date based on information received via a client device 10. As illustrated in FIG. 13, the term date may be associated with a term period during which the agreement term is applicable. The term date may be, for example, an effective date after which the agreement term is applicable or an expiration date after which the agreement term is not applicable. The
15   term date may also be a term period (*e.g.*, indicating that the agreement term is to be applicable for one year from a date on which an agreement document was signed). The term date may also be an entry date (*e.g.*, a date on which information about the agreement term was entered into the agreement modeling system 100).

          At 1206, an indication of the agreement term is stored in association with an
20   indication of the term date so that an applicability of the agreement term can be automatically determined based at least in part on the term date. According to one embodiment, the agreement modeling system controller 1000 stores the appropriate information in the agreement information database 1100. The agreement modeling system controller 1000 may also store, in association with the agreement term, an
25   indication of at least one supporting agreement document (*e.g.*, a pointer, a word processing file, or an electronic image file associated with a supporting agreement

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document). For example, a document identifier may be stored to let a user quickly access an agreement document that defines the agreement term and/or the term date.

Consider, for example, an agreement that defines a maximum amount of credit that will be extended from a party to a counter-party. The agreement modeling system 5   controller 1000 may store the amount of credit along with an expiration date (*e.g.*, a date after which credit will not be extended to the counter-party).

Referring again to FIG. 13, note that information about an agreement term may be entered into the agreement modeling system 100 (*i.e.*, on the entry date) after the agreement term has expired (*i.e.*, the expiration date). Similarly, an entry date may be 10   prior to the effective date of the agreement term. Of course, the entry date may also fall between the effective date and the expiration date. In any case, a user at a client device 10 can query the agreement modeling system controller 1000 to determine if an agreement term is applicable on a particular date (*e.g.*, the current date or any other "query" date of interest to the user).

15   Agreement Modeling System Covered Products Matrix

FIG. 14 is a flow chart of a method associated with a covered products matrix according to some embodiments of the present invention. The method may be performed, for example, by the agreement modeling system controller 1000 and may be associated with a transaction agreement defining a plurality of product types (*e.g.*, a 20   number of different financial products) and instruments (*e.g.*, a number of different financial instruments).

At 1402, an agreement type is automatically determined based on the plurality of product types (or instruments) and a "covered products matrix." As used herein, the phrase "covered products matrix" may refer to, for example, any stored indication of 25   transaction instruments (*e.g.*, swaps, options, and forwards) and product types (*e.g.*, stocks, bonds, and credit derivatives) in connection with a particular agreement. Note

that the stored information does not necessarily need to be in the form of a matrix or an array.

     The agreement type determined at 1402 may be associated with, for example, a set of rights between the party and the counter-party, a legal contract, a product type, a

5   monetary amount, and/or a transaction instrument. According to one embodiment, the agreement type comprises a document type name (*e.g.*, an ISDA® master agreement type) and one or more document type facts (*e.g.*, further characterizing the document type).

     One example of a covered products matrix is illustrated in FIG. 15. As shown in

10   FIG. 15, an agreement may be associated with a number of different financial products. For example, an agreement may be associated with an equity instrument (*e.g.*, a stock or index instrument), a fixed income instrument (*e.g.*, a bond, a bank loan, or a credit derivative), and/or a commodity instrument (*e.g.*, a precious metals instrument or a wheat commodity instrument). For each financial product, the agreement may further be

15   associated with one or more financial instruments (*e.g.*, a warrant or a buy-call option).

     By way of example, a user may indicate that a particular agreement is going to be associated with (i) buy and sell options for gold commodities and (ii) swaps for silver commodities (*i.e.*, as indicated as "Y" in FIG. 15). Based on this information, an appropriate agreement type may be determined by the agreement modeling system

20   controller 1000.

     At 1404, an agreement term between the party and the counter-party is determined in accordance with the agreement type. For example, the agreement modeling system controller 1000 may determine a number of default agreement terms (*e.g.*, default credit limits) associated with a particular agreement type. In general, the

25   agreement term may be associated with, for example, a right between the party and the counter-party, a legal contract term, a product type, a monetary amount, and/or a transaction instrument.

Consider the covered products matrix illustrated in FIG. 16. As can be seen, the agreement is associated with (i) swaps and options for metal commodities and (ii) options for energy commodities. Based on these parameters, the agreement modeling system controller 1000 may determine an appropriate agreement type and populate a document

5   with appropriate terms and parameters for these types of transactions.

In general, the covered product matrix may be associated with any number of product types, such as equity products, stock products, index products, fixed income products, bond products, bank loan products, whole loan products, interest rate products, credit derivative products, commodity products, metal products, energy products,

10   agriculture products, and/or any other type of product. Similarly, the covered product matrix may be associated with any number of transaction instruments, such as swap instruments, option instruments, buy instruments, sell instruments, call instruments, put instruments, forward instruments, pre-paid forward instruments, spot instruments, repurchase agreement instruments, loan instruments, warrant instruments, a contract for

15   differences instrument, and/or any other type of instrument.

Moreover, the covered products matrix may indicate when a particular financial instrument is approved (or disapproved) with respect to an agreement between a party and a counter-party. Also note that the covered products matrix may indicate if either of these items are "under investigation" (*e.g.*, approval or disapproval is pending) or "not

20   contemplated" (*e.g.*, by the party or the counter-party). Similarly, the covered products matrix may indicate compliance authorization information, default information, party or counter-party information, legal information, and/or master agreement information.

The agreement term may be automatically determined at 1404 by defining the agreement term based on a pre-stored default transaction term (*e.g.*, a "best practices"

25   transaction term). The agreement term may also be automatically determined by defining the agreement term based on information receive from a user (*e.g.*, via a client device 10) or a legacy agreement system.

According to another embodiment, the agreement term is also based on information receive from a satellite system. For example, the agreement term may be based on input received from a business system 30, a legal system 40, a compliance system 50, a credit system 60, a treasury system 70, and/or an operations system 80.

5   The covered products matrix may set the scope of a particular agreement between a party and a counter-party. From a compliance system 50 perspective, an individual covered products matrix may exist for each "entity pair" (*i.e.*, a party – counter-party pair). From a legal system 40 perspective, a covered products matrix may exist for each agreement, and there may be multiple covered product matrices for a single entity pair.

10   In this case, the agreement modeling system controller 1000 may ensure that this does not result in over-lapping coverage.

According to one embodiment, there are multiple layers of information associated with each intersection in the covered products matrix. For example, there may be an "authorized scope" layer that captures approval of the compliance system 50 regarding

15   which products a given counter-party is allowed to trade. According to one embodiment, when the compliance system 50 indicates an authorized scope, the agreement modeling system controller 1000 defaults certain products to "no" based on a pre-defined rule. For example, if a new authorized scope entry is created for a particular counter-party, the agreement modeling system controller 1000 may default all foreign exchange products to

20   "no" since the compliance system 50 does not typically approve foreign exchange products with that particular counter-party. According to one embodiment, an operator may override these defaults determinations.

Based on authority documents and other relevant information, the compliance system 50 may mark appropriate products with a "yes," indicating that those products

25   may be traded with the counter-party. The compliance system 50 may also have the ability to mark products with a "no" (indicating disapproval) or "in progress" indicating that the product is in the process of being considered. All other boxes may remain blank indicating that the product has not been (and is not being) considered.

With respect to the legal system 40, there may also be a "document scope" layer that captures a range of products that could possibly be covered by a master agreement (*e.g.*, according to a court of law). According to one embodiment, when a new master agreement is created, the agreement modeling system controller 1000 use a default

5   document scope if the agreement type in question is always limited to a certain subset of products. A user may also over-ride these default values.

There may also be an "approved scope" layer that captures the products for which legal system 40 would like to use a given master agreement. For example, the legal system 40 may define for each master agreement a set of trades for which that master

10   agreement should be used. This set of trades may be a subset of the document scope, and the document scope may therefore be defined before the approved scope. According to one embodiment, the approved scope is limited to a subset of the authorized scope.

FIG. 17 is a flow chart of another method associated with a covered products matrix according to some embodiments of the present invention. At 1702, an agreement

15   type is determined. At 1704, an agreement term is determined. The agreement type and agreement term may be determined via any of the methods described herein (*e.g.*, user input, default values, or satellite systems).

The agreement type and the agreement term are then evaluated, resulting in an indication being generated at 1706. For example, the transaction agreement may

20   associated with a plurality of financial product types. In this case, the evaluation may comprise evaluating the agreement type and the agreement term based on the plurality of financial product types and a covered products matrix. The indication that is generated at 1706 (*e.g.*, indicating whether or not the agreement type and term are appropriate based on the financial product types) may be provided, for example, to a user of an agreement

25   modeling system and/or a satellite system. According to one embodiment, the indication comprises a "warning flag" indicating that the details of the agreement need to be carefully reviewed.

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Agreement Definition

FIG. 18 is a flow chart of a method for facilitating definition of a transaction agreement between a party and a counter-party according some embodiments of the present invention. At 1802, an agreement document template is created in association

5   with a transaction agreement type. At 1804, a plurality of agreement facts are determined. The agreement facts may be associated with, for example, the party and/or the counter-party. At 1806, an agreement document instance associated with the transaction agreement is defined. The agreement document instance may be based on, for example, the agreement document template and the plurality of agreement facts. A

10   more detailed description of agreement definition according to some embodiments of the present invention will now be provided with respect to FIGS. 19A through 27.

FIGS. 19A and 19B are block diagrams of agreement modeling system functions, applications, and interactions according to some embodiments of the present invention. In particular, FIG. 19A presents an engine-level overview of the client device 10 and the

15   agreement modeling system controller 1000 according to one embodiment. The client device 10 includes a display engine 1902 that may be used to exchange information with a user (*e.g.*, by receiving information from and displaying information to the user). The display engine 1920 may comprise, for example, a typical WINDOWS® style Multi-Document Interface (MDI) application. Such an application may simultaneously display

20   one or more agreements. Some examples of user displays that may be processed by the display engine 1902 are described herein with respect to FIGS. 22 through 24.

The agreement modeling system controller 1000 includes an administrator 1910 and an agreement engine 1920 described in detail with respect to FIG. 19B. The agreement modeling system controller 1000 also includes an evaluation engine 2040 and

25   a creation engine 2030 described in detail with respect to FIGS. 20 and 21. In addition, the agreement modeling system controller 1000 may include a fact engine 1904 that may, for example, be used to process facts and fact sets as required.

FIG. 19B illustrates the operation of the administrator 1910 and the agreement editor 1920. The administrator 1910 may be used to create an agreement template, including templates for various documents associated with that type of agreement. For example, the agreement template may include an original document template, a schedule

5   document template, a CSA document template, and/or an amendment document template.

The agreement editor 1920 may be used to create an agreement instance based on the agreement template. The agreement instance may, for example, include instances of one or more document templates (*e.g.*, an original document instance, a schedule document instance, a CSA document instance, and/or an amendment document instance).

10   Both the agreement template and the agreement instance may be stored in the agreement modeling system database 1930 for future use.

FIG. 20 is a block diagram of agreement creation interactions according to some embodiments of the present invention. In particular, the creation engine 2030 may manufacture new agreements and documents. The creation engine 2030 may exist in the

15   database/backend 2020 and may comprise a creation processor 2050 and an instance of the evaluation engine 2040 (*e.g.*, that extends from the evaluation engine 2040 object in the Java/object sense).

The creation engine 2030 may service two types of create operations: a create agreement operation and a create document operation. A successful create agreement

20   operation results in a new agreement including one or more associated required documents. A successful create document(s) operation results in the creation of one (or more) new documents associated with an existing agreement.

An instance of the creation engine 2030 is manufactured to service each create operation (note that the create functionality may be exposed via Java Stored Procedures).

25   The create agreement operation may be invoked from the agreement editor 1920 upon a completion of an agreement wizard as follows. The agreement wizard may be selected via a "file – new" menu item, followed by selection of sub-menu items that allow selection of a specific agreement wizard. The content of each agreement wizard may be

defined by one or more agreement wizard fact sets. The agreement wizard is completed by activating a "finish" button on one of the wizard pages. When the "finish" button is activated, all of the combined agreement wizard fact sets are communicated to the database backed 2020, in the form of an XML document describing the fact set content,

5   via a middle–tier 2010. The middle-tier 2010 simply passes the stream through to the database/backend 2020.

Upon the invocation of a stored procedure, an instance of the creation engine 2030 is instantiated. Within the instance of the creation engine 2030, an instance of the evaluation engine 2040 is created and initialized with an agreement scope that contains

10   all of the facts defined in the wizard fact sets passed from the agreement editor 1920.

Once the creation engine 2030 and its embedded evaluation engine 2040 are initialized, the creation processor 2050 determines the appropriate agreement to be created (via "applies rules"). If an appropriate agreement is found, it is determined if the user has the appropriate rights to create all required documents associated with the

15   agreement (via "security rules"). If the user has appropriate rights, then the agreement is created by systematically creating the required documents associated with the agreement, conditionally populating each document's content with the fact sets and facts that are included through the applies rules analysis. In addition, default values and attributes may be assigned to facts populated into documents.

20   The creation processor 2050 may use a series of stored procedure calls that operate directly on the agreement, document, and fact set or fact instance tables populating instance data into the tables as the intermediate result of rules and expression evaluations. In general, a set of well-defined stored procedures may accommodate the entire agreement creation process.

25   After the agreement and all of its associated required documents have been created, updates to security access tables and views may be computed.

The immediate return value for the create agreement operation from the database/backend 2020 to the middle-tier 2010 may simply comprise signal of success or

failure. If the creation of the agreement failed, then the middle-tier 2010 returns an appropriate Java exception to the agreement editor 1920.

Upon successful creation of an agreement, the middle-tier 2010 (prior to returning information to the agreement editor 1920) may orchestrate call(s) back to the

5   database/backend 2020 to make it appear as if the agreement editor 1920 had called an "open agreement" operation. That is, an entire XML stream representing the opening of the newly created agreement may be returned.

FIG. 21 is a block diagram of document creation interactions according to some embodiments of the present invention. The create documents operation may be invoked

10   from the agreement editor 1920 when an "add" button is activated via a multi-document tab and one of the listed document types are selected. Such a multi-document tab approach enables the management of more than one document (and document type) via a single tab. A multi-document list box may display all instances of existing documents that are associated with that tab (*e.g.*, documents may be associated with a tab based on a

15   document type's document group membership).

When the "add" button is activated, the agreement editor 1920 may first call a method that returns an array of (partially loaded) objects that are used to populate an "add document" selection dialog associated with the "add" button. A corresponding stored procedure may form the list of document types based an a specific user and/or agreement.

20   Upon the selection of a document type from the "add document" list, the agreement editor 1920 sends the selected document type information to the database backed 2020 via a middle-tier 2010 API call.

An instance of the creation engine 2030 is then instantiated by the database/backend 2020. Within the instance of the creation engine 2030, an instance of

25   the evaluation engine 2040 is created and initialized with the agreement scope that is applicable for the active agreement. According to one embodiment, the agreement scope is passed as an XML stream by the agreement editor 1920 which has the scope loaded for

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the active agreement. According to another embodiment, the scope is instead loaded from a database 2060.

Once the creation engine 2030 and the embedded evaluation engine 2040 are initialized, the creation processor 2050 conditionally populates the document's content with the fact sets and facts that are included through an "applies rules" analysis. In addition, default values and attributes are assigned to each fact based upon "value and attribute expressions."

Depending upon the context of the create document algorithm invocation, the instance of the creation engine 2030 may be associated with a create agreement operation or a create document operation. In either case, the appropriate agreement scope may be initialized on the associated evaluation engine 2040.

Note that a series of stored procedure calls by the creation processor 2050 may operate directly on the document and fact set - fact instance tables populating instance data into the tables as the result of the rules and expressions evaluations. In general, a set of well-defined stored procedures may accommodate the entire agreement, document, fact set, and/or fact creation process. At the end of the create document algorithm, security tables and views may be calculated.

The availability of the document scope enables applies rules, value expressions, and attribute expressions to be written that are generally more localized to a document's context. With the document scope included, rules and expressions can be written that do not need to rely solely on agreement level attributes to drive the creation process.

The intermediate return value from the create document operation from the database/backend 2020 to the middle-tier 2010 may simply be a signal of success or failure. If the creation of the document failed, then the middle-tier 2010 returns an appropriate Java exception to the agreement editor 1920.

Upon successful creation of a document, the middle-tier 2010 (prior to returning information to the agreement editor 1920) may orchestrates call(s) back to the database/backend 2020 to make it appear as if the agreement editor 1920 had called an

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update document operation. That is, an entire XML stream representing the newly created document may be returned.

Agreement Modeling System Client Displays

FIGS. 22 through 24 illustrate client displays associated with an agreement
5   according to an embodiment of the present invention. Note that the system may be document-centric in the display of agreement information., and that a new agreement may be created via a special wizard "fact set" that asks questions and receives answers (fact values) that are used by the fact engine's rules-based wizard to determine the agreement type, documents, fact sets, and facts that are populated in the agreement.

10   In particular, FIG. 22 illustrates a display 2200 when no agreement is loaded into the application. A user selects an existing agreement from a search dialog that is associated with the "file ... open agreement" menu item.

FIG. 23 illustrates a display 2300 after an agreement has been loaded. Each agreement instance in the MDI display frame contains a set of display tabs that are
15   dynamically generated according to a set of document groups that are defined for the agreement. Each document group has one or more documents that are members of the group and whose contents will be displayed on the relative document group tab.

As can be seen, FIG. 23 illustrates the layout of a general "agreement data" single-document group tab. Note that a consistent display space may be organized
20   around the current document and active fact set. For example, a tab associated with a single-document display may divide the display 2300 into a left and right pane.

The current document's name ("LCA Today") is displayed at the top of the left-pane. The left-pane list box contains the set of fact sets that are defined for the current document (*e.g.*, "agreement data," "counter-party data," "credit support," and "cross
25   acceleration"). The right-pane contains the contents for the actively selected fact set within the current document. The name of the active fact set (*e.g.*, "agreement data") may be displayed in the top of the right-pane.

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FIG. 24 illustrates a display 2400 when an agreement has been loaded, and the display 2400 is associated with a multi-instance fact set display (*i.e.*, "counter-party data"). In this case, the right-pane is divided into two areas. The top area includes a list box of instances of the active fact set. The display entry in the list box is formed by an expression associated with the fact set. The bottom portion of the right-pane display area indicates the facts that comprise the fact set which may be displayed in linear order (as with the single-instance display space).

Agreement Modeling System Work Flows

FIG. 25 is a flow chart of a method for facilitating definition of an agreement between a party (including a first party entity and a second party entity) and a counter-party according some embodiments of the present invention. At 2502, a first agreement term is determined via the first party entity. For example, the first agreement term may be defined by a compliance entity. At 2504, a second agreement term is determined via the second party entity (*e.g.*, based at least in part on the first agreement term). For example, a legal entity may define the second agreement term based on the first agreement term.

A more detailed example of this process will now be provided with respect to FIGS. 26A and 26B. At 2602, a request for an agreement is received by the agreement modeling system controller 1000 (*e.g.*, via a client device 10). If the agreement is associated with a marketing tool at 2604 (*i.e.*, the request may need to be processed immediately), a pre-draft of the agreement is generated at 2606.

If the agreement is not associated with a marketing tool at 2604, a priority is assigned to the request at 2608 (*e.g.*, as compared to other requests received by the agreement modeling system controller 1000). Note that trade activity detected at 2610 and a subsequent post-trade notification report 2612 may also result in a priority being assigned at 2608.

After a priority is assigned to the request, at 2614 the agreement modeling system controller 1000 triggers a compliance entity 2616 for data. For example, the compliance entity 2616 may receive, review, and respond to information associated with the requested agreement (*e.g.*, to ensure that the information complies with relevant

5   compliance standards and procedures). If the compliance data is not complete at 2618, a data gathering entity issues a report at 2620 (*e.g.*, to arrange for more data to be collected).

If the compliance data is complete, at 2622 the agreement modeling system controller 1000 triggers a credit entity 2624 for data. For example the credit entity 2624

10   may receive, review, and respond to information associated with the requested agreement (*e.g.*, to ensure that the information complies with relevant credit standards and procedures). Moreover, if it is determined that the agreement is bilateral at 2626, the agreement modeling system controller 1000 triggers a treasure entity 2632 for data at 2630 (*e.g.*, to ensure that the information complies with relevant treasury standards and

15   procedures).

The agreement modeling system controller 1000 then determines if the agreement data is complete at 2628. If the agreement data is not complete, the data gathering entity issues a report at 2620 (*e.g.*, to arrange for more data to be collected). If the agreement data is complete, a pre-draft of the agreement is generated at 2606.

20   FIG. 27 illustrates some examples of agreement definition via multiple party entities according to an embodiment of the present invention. In particular, the first work flow 2710 is associated with agreement definition when a business entity initiates a request for a new agreement associated with a risk transaction. Information from the business entity is forwarded to a compliance entity for review (and/or for further

25   information). The agreement information is then reviewed (and/or supplemented) by a credit entity and finally by a legal entity (*e.g.*, for approval).

The second work flow 2720 is associated with agreement definition when a business entity initiates a request for a new agreement associated with a non-risk

transaction. This situation is similar to the first work flow 2710, except that the credit

entity is not involved (*e.g.*, because it is a non-risk transaction).

The third work flow 2730 is associated with agreement definition when the

compliance entity initiates a request for a new agreement on behalf of a business entity.

5   This situation is similar to the first work flow 2710, but the business entity is not

(directly) involved. Moreover, involvement of the credit entity in the work flow may not

be required in the case of a non-risk transaction.

The fourth work flow 2740 is associated with agreement definition when the

credit entity initiates a request for a new agreement on behalf of a business entity. Again,

10   the situation is similar to the first work flow 2710, but the business entity is not (directly)

involved. Also note that, in this case, the credit entity is involved before the compliance

entity.

The fifth work flow 2740 is associated with agreement definition when a treasury

entity initiates a request for a new agreement on behalf of a business entity. This similar

15   to the first work flow 2710, but the business entity is not (directly) involved.

Additional Embodiments

The following illustrates various additional embodiments of the present invention.

These do not constitute a definition of all possible embodiments, and those skilled in the

art will understand that the present invention is applicable to many other embodiments.

20   Further, although the following embodiments are briefly described for clarity, those

skilled in the art will understand how to make any changes, if necessary, to the above-

described apparatus and methods to accommodate these and other embodiments and

applications.

Many of the embodiments described herein include an agreement modeling

25   system controller 1000 that facilitates definition of an agreement. According to other

embodiments, however, some or all of these functions are instead performed by other

devices. For example, multiple devices may communicate with each other to perform the

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functions described herein without the use of a "controller" (*e.g.*, a peer-to-peer model may be used). Moreover, many of the devices illustrated in FIG. 3 (including some or all of the satellite systems) may be incorporated in a single device.

In addition, many of the embodiments described herein are directed to financial transaction agreements. However, the present invention is applicable to may other types of agreements as well (*e.g.*, contracts with a governmental authority).

The present invention has been described in terms of several embodiments solely for the purpose of illustration. Persons skilled in the art will recognize from this description that the invention is not limited to the embodiments described, but may be practiced with modifications and alterations limited only by the spirit and scope of the appended claims.